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Inventory Management

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ABSTRACT

Inventory management is a vital process in business operations that involves overseeing, controlling, and optimizing the flow, storage, and usage of goods. Its primary objective is to ensure the availability of the right products in the right quantity at the right time, thereby minimizing excess stock and avoiding stockouts. Effective inventory management strikes a balance between supply and demand, reduces holding costs, improves cash flow, and enhances customer satisfaction.

Various methods such as Just-in-Time (JIT), Economic Order Quantity (EOQ), and ABC analysis are employed to improve inventory decision-making. Additionally, advancements in technology have introduced inventory management software and automated tracking systems that offer real-time data, improving the accuracy and efficiency of stock control.

In manufacturing, inventory includes raw materials, work-in-progress, and finished goods, while in service sectors, it refers to work in process or pending tasks. The discipline plays a critical role across multiple sectors such as retail, logistics, e-commerce, and production.

With growing market demands and globalization, inventory management has evolved into a strategic tool that directly impacts operational success, cost-effectiveness, and competitive advantage. As such, mastering inventory management is essential for businesses aiming to streamline operations and achieve long-term profitability.

Keywords: Stock Optimization, Supply Chain, Demand Forecasting, Operational Efficiency, Inventory Control Systems

1. INTRODUCTION

Inventory management is the process of overseeing, controlling, and optimizing the storage, movement, and usage of goods within a business. It ensures that the right quantity of products is available at the right time, minimizing costs while meeting customer demand. Effective inventory management helps businesses avoid overstocking, which can lead to increased holding costs, and understocking, which may result in lost sales and customer dissatisfaction. It plays a crucial role in supply chain management by maintaining a balance between supply and demand.

There are various techniques and systems used for inventory management, such as Just-in-Time (JIT), Economic Order Quantity (EOQ), and ABC analysis. Businesses also use modern technology, including inventory management software and automated tracking systems, to improve accuracy and efficiency. Proper inventory management enhances operational efficiency, reduces waste, and maximizes profitability. For businesses in sectors like retail, manufacturing, and e-commerce, an effective inventory management strategy is essential for maintaining a competitive edge and ensuring customer satisfaction.

Inventory (British English) or stock (American English) refers to the goods and materials that a business holds for the ultimate goal of resale, production or utilisation.

Inventory management is a discipline primarily about specifying the shape and placement of stocked goods. It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials.

The concept of inventory, stock or work in process (or work in progress) has been extended from manufacturing systems to service businesses and projects, by generalizing the definition to be "all work within the process of production—all work that is or has occurred prior to the completion of production". In the context of a manufacturing production system, inventory refers to all work that has occurred—raw materials, partially finished products, finished products prior to sale and departure from the manufacturing system. In the context of services, inventory refers to all work done prior to sale, including partially process information.

2. RESEARCH METHODOLOGY

Sources of the Data

To attain the objective of studying the inventory of HERO COMPANY, the information has been collected in two ways:

1. **Primary Data**
2. **Secondary Data**

Primary Data

In primary data, the analysis of purchasing procedure, inventory data, inventory turnover ratio, stock levels, ABC analysis, Two-bin system, and JIT has been made possible through discussions with various administrative executives and other concerned people of HERO COMPANY.

Secondary Data

The secondary data has been collected from:

- Annual reports of the organization**.**
- Books and other reference materials on inventory management.
- Internet sources related to HERO COMPANY.

Methodology

- Inventory management techniques are studied in detail.
- Various techniques of inventory management are analyzed.
- Inventory management techniques such as ABC Analysis are examined.

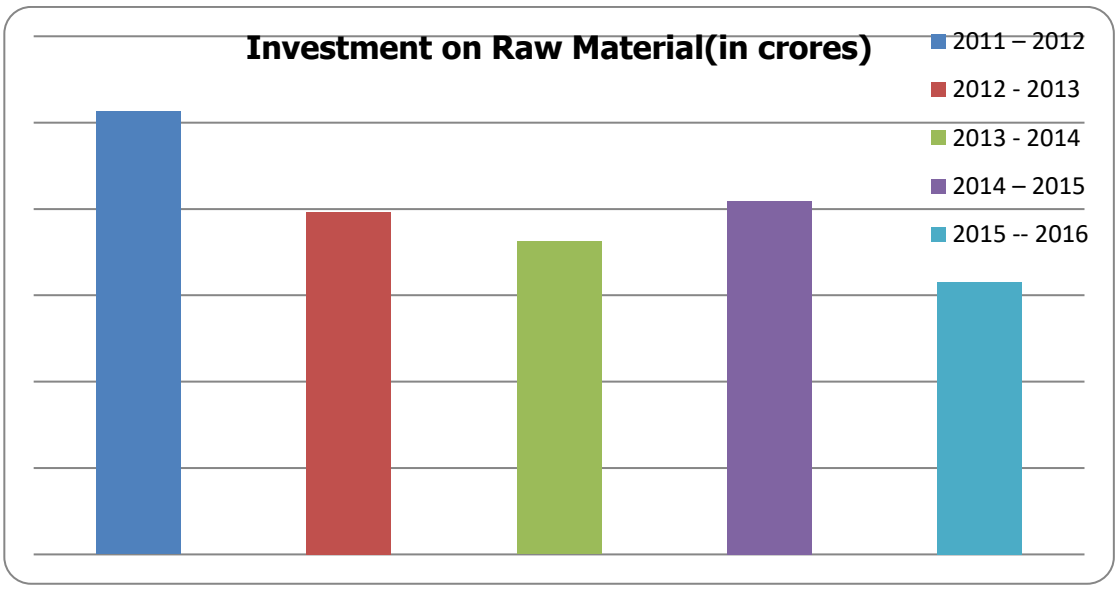
3. DATA ANALYSIS

The investment on raw materials over a period of 5 years from 2023 to 2024 is presented in the following table.

Table 3.1. Investment on Raw Materials:

Year	Investment on Raw Material (in crores)
2019 – 2020	5128.75
2020 – 2021	3964.26
2021 – 2022	3623.83
2022 – 2023	4088.77
2023 – 2024	3154.11

Chart 3.1



Interpretation:

1) From the above table it can be understood that the inventory of was recorded at 3154.11 during the year 2015 – 15 and it is decreased to 4088.77 during the year 2014 – 14.

2) It shows that there is on decrease in the inventory to the more extent of 3154.11.

3) The average inventory of HERO MotoCorp was recorded at Rs.3991.94.

4) The highest investment in inventory was recorded in the years 2014-14.

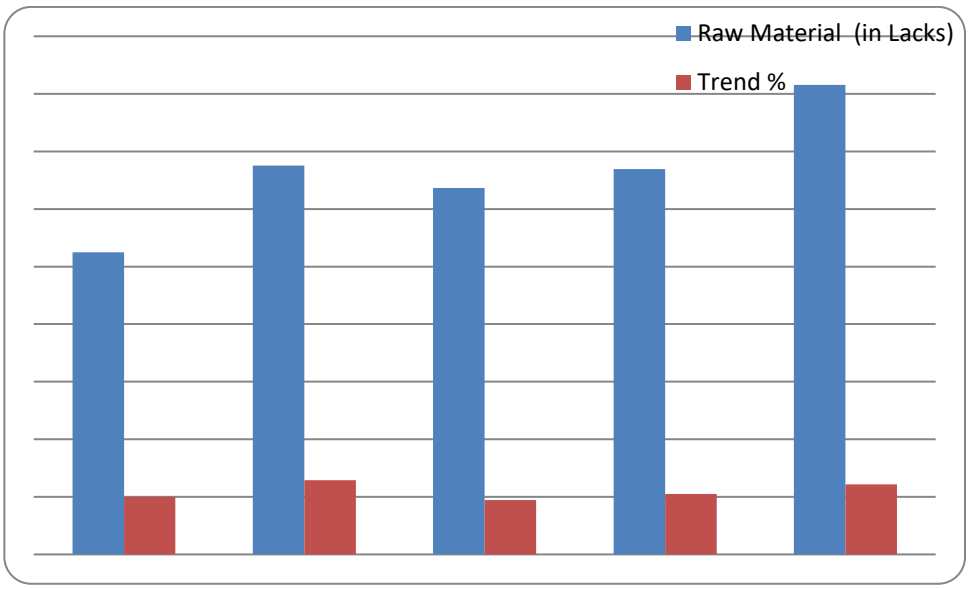
Table 3.2.Trend Analysis:

Trend analysis technique is applied to know the growth rate in investment of raw material of Hero MotoCorp Ltd over the review period which is shown in the following table.

Trend Analysis:

Year	Raw Material (in Lacks)	Trend %
2019 – 2020	524.93	100
2020 – 2021	675.57	128.69716
2021 – 2022	636.76	94.2552215
2022 – 2023	669.55	105.149507
2023 – 2024	815.49	121.796729

Chart 3.2



Interpretation:

1)The investment on inventory has increased in the year 2015 – 15. And the lost year investment has declared continuously. The percentage in 2011 – 11 was 128.69 % as compared to years 2011 – 11 to 2015– 15.

2)The trends in inventories show that inventory have been more in the year 2012 – 12 and then it has shown a downward trend and again it increased to some extent.

Table 3.3 : Inventory Turnover Ratio:

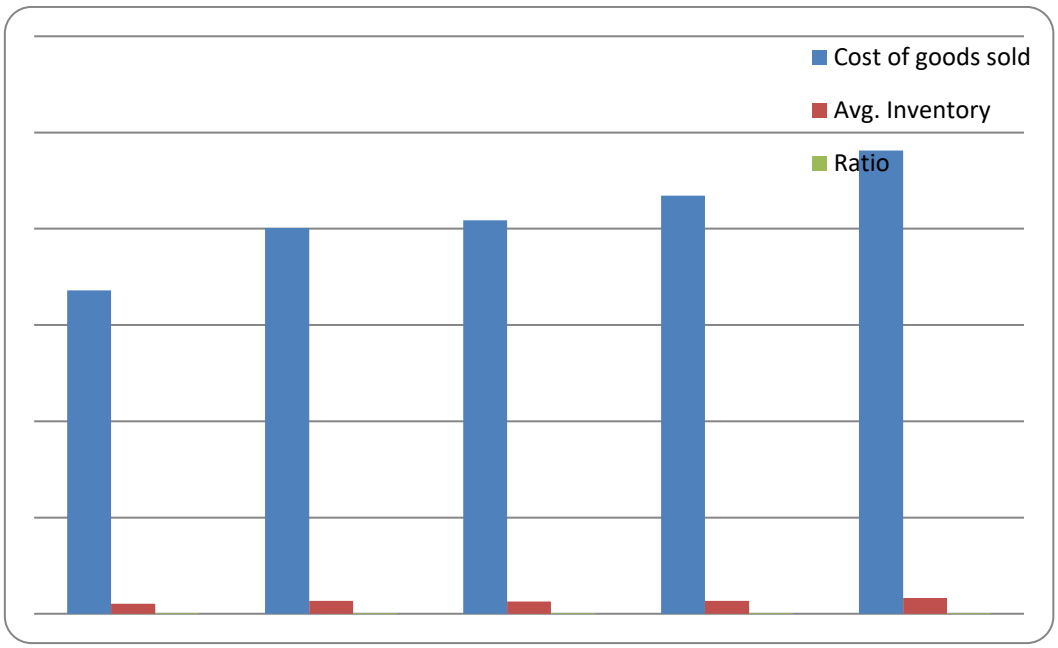
This ratio indicates the number of times the stock has been turned over during the period & evaluates the efficiency with which a firm is able to manage its inventory. This ration is calculated by applying the following formula.

$$\text{Inventor turn over ration} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Inventory turnover ration:

Year	Cost of goods sold	Avg. Inventory	Ratio
2019 – 2020	16796.90	524.93	31.9983617
2020 – 2021	20032.81	675.57	29.6531966
2021 – 2022	20446.16	636.76	32.1096802
2022 – 2023	21727.05	669.55	32.4502277
2023 – 2024	24073.09	815.49	29.519785

Chart 3.3



Interpretation:

From the above table it can be observed that inventory turnover ratio is 31.99 in the year 2011-11 and it gradually decreased to 29.51 during 2023 – 2024.In the year 2023 – 24 it is clear that the ratio is very less i.e., his stock.Is not turned into sales quickly.As compared to all the years the ratio is very less in 2023 – 24.The average inventory turnover ratio was recorded at 29.51 times during the review period.

4. CONCLUSION

Today business scenario inventory management is becoming very crucial part of the organization. The system of inventory management in Hero MotoCorp Ltd very effective. The organization is basically and assembling unit and thus inventory place a most significant role in the decision making process. From the various calculations and figures relating to inventory management it is clear that the inventory classification of A items are maintain for days, as a result it reduce investment in raw material, reducing the lead time and also the large quantity discount because the stock are kept for days.

In the classification of ABC items procedure is following in Hero MotoCorp Ltd has launched the different type of card system for class C items. Class A & B items are consider under the just in time philosophy as the procurement time has been reduced up to greater extent by the proper co-ordination of buyer and supplier. There is great improvement in the inventory turnover ratio from 5 years. It is increased from 6.21 to 7.69% this position indicates that the stocks are fast moving and get converted into sales quickly in Hero MotoCorp Ltd, Finally we conclude that Hero MotoCorp Ltd the inventory system is very good with high techniques.

5. REFERENCES

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